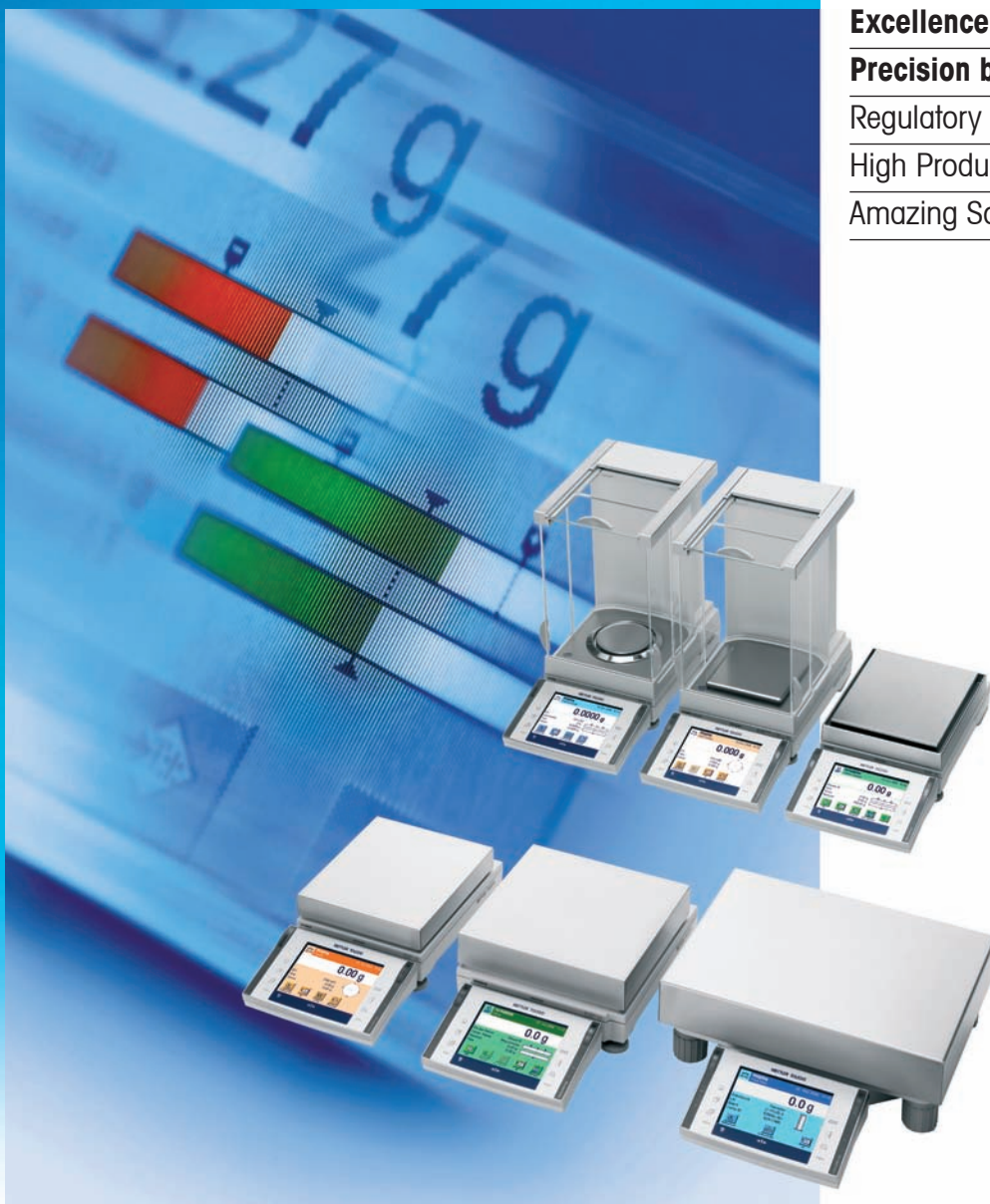


# XP Precision Balances



**Excellence Plus XP**

**Precision balances**

Regulatory Compliance

High Productivity

Amazing Solutions

## Versatility

## For High-End Requirements

**METTLER TOLEDO**

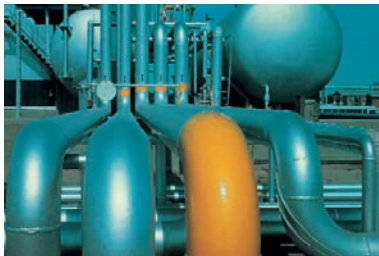
# Your Wishes? Our Solution.

**As the world's leading manufacturer of laboratory balances, our goal is to make weighing easier with innovative solutions that focus on your needs. Because, in our opinion, technical progress is only true innovation if it gives our customers measurable benefits.**



### **Many applications**

Our balances are used in numerous industries and environments, including pharmaceuticals, food, cosmetics, research, quality assurance and production, for a multitude of applications.



### **One balance**

With the Excellence Plus XP, the precision balance for high-end requirements, METTLER TOLEDO again sets the standard for weighing in the laboratory and in industrial environments. Created for a broad spectrum of applications in a variety of industries, the XP provides full compliance in regulated environments, utmost productivity and unique flexibility when tailored solutions are required.



### **Individual user profiles**

SmartScreen, the unique color touchscreen display, makes operation intuitive and easy. It guides the user through applications and warns if tolerance limits are violated - for maximum security. Up to 8 user profiles are individually configurable in 7 languages.





## Regulated area

"In our pharmaceutical company, we work according to GLP/GMP, USP and standard operating procedures. Authorities and customers regularly perform audits to verify conformity with these quality guidelines. Balances have to comply 100 % with these regulations, because the **security** of our measurement values is vital for our success."

**Julie Evans, USA**



## Production environment

"We print textiles with different patterns which are based on specific mixtures of dye. Because of our high daily production rate, the **speed** of our balances is very important. Also, to ensure consistent printing quality, it's essential to mix the dyes as **precisely** as possible."

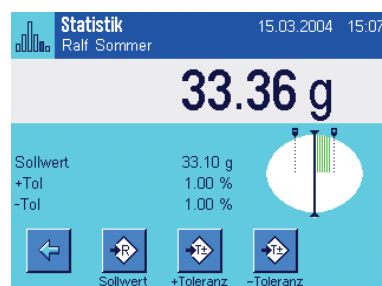
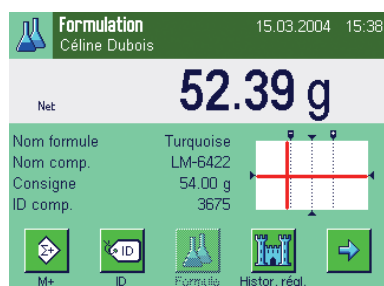
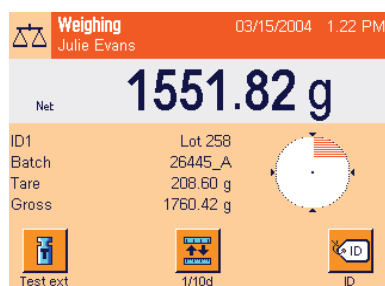
**Céline Dubois, France**



## Research and development

"When manufacturing toxic solutions, I often weigh in the laminar flow cabinet wearing gloves. So for me, a **simple work process** is crucial. To work safely, the balance should offer hands-free operation and the printer should be placed outside the laminar flow bench."

**Ralf Sommer, Germany**



# Regulatory Compliance and Utmost Accuracy

- **proFACT and BalanceCheck for utmost measurement certainty**
- **LevelControl guarantees correct leveling at all times**
- **User management and password protection for 8 users**
- **Reports compliant with GxP and other quality guidelines**



"My XP balance gives me security. The QM tools are very practical and help me to implement our quality guidelines in my daily work."

**Julie Evans, USA**

## Regulated environments

When quality guidelines determine your daily work, the Excellence Plus XP gives you outstanding support. With innovative QM tools which warn, remind and protect, the XP helps you achieve full regulatory compliance.

## Precision redefined

Highly precise, repeatable results are the hallmark of the XP thanks to fully automatic temperature- and/or time-controlled internal adjustment with proFACT. And regular checking of the measurement certainty is assured with BalanceCheck – at the times you define and with the external weights you specify.

## Programmed security

The personal settings of up to eight users can be stored in the menu and protected with a password. Thanks to the User Management the administrator can define

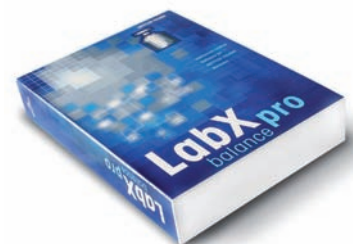
individual access rights for each user and protect them against unwanted modification by means of a password – for programmed security at all levels.

## Tailor-made documentation

Adjustments and changes to protected settings are registered in the change/adjustment history. Thanks to four alphanumeric IDs, full traceability of samples is possible and all measurement results can be documented to conform to GxP.

## Data management

If data management according to FDA 21CFR Part 11 is needed, our LabX balance PC-based software offers the comprehensive solution for stand alone or networked balances.

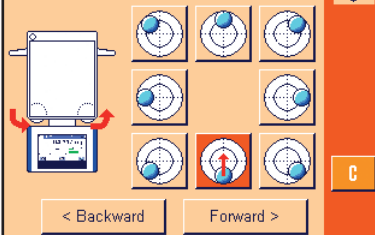


► [www.mt.com/LabX](http://www.mt.com/LabX)



## LevelControl

Please press the appropriate button to show the leveling direction



The XP warns if it is not correctly leveled and also immediately indicates the easiest way to level it.

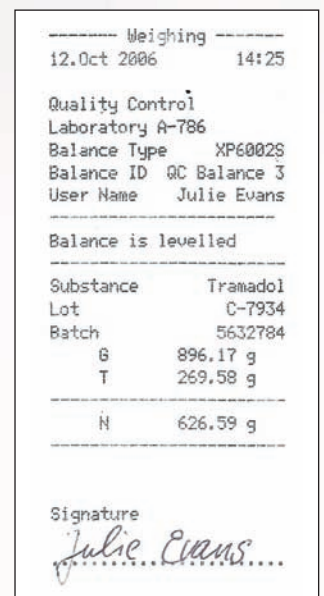
## User management

Eight users, individual settings, specific applications, different authorizations – no problem. The administrator manages each user's access rights – for total security.



## Seamless documentation

GxP-compliant reports can be configured easily.

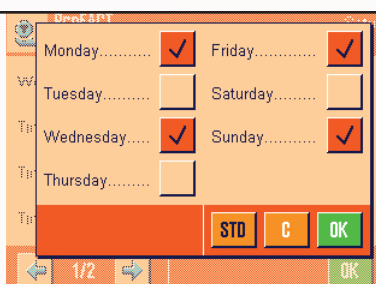
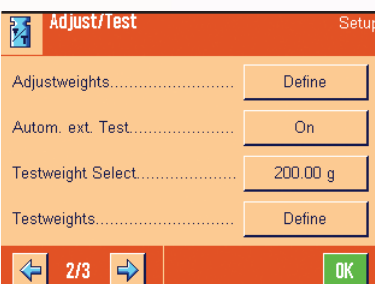


## Password protection

Users' individual settings can be protected against unwanted changes.

## BalanceCheck

If desired, BalanceCheck automatically prompts you to validate the measuring accuracy with an external weight – every time the SOP demands it.



# Increased Productivity Reduces Cost

- Cutting-edge weighing technology for fast, precise results
- Repeatable production processes with MinWeigh
- Rugged construction for use in harsh environments equivalent to IP54
- Easy cleaning thanks to straightforward design



"It's marvellous how fast I can work with my XP and thanks to MinWeigh never make a mistake when mixing the dyes. That cuts out waste and reduces downtime on our printing machines, so we save money."

**Céline Dubois, France**

### Weighing time is money

Whether you print textiles, develop fragrances or manufacture screws, productivity is key for your company. This also applies to your work on the balance, which must be fast and faultless. The Excellence Plus XP provides outstanding measurement performance and process security – for utmost productivity in weighing.

### Outstanding measurement performance

Cutting-edge weighing technology makes it possible: the weighing results of the XP stabilize very quickly. Thanks to intelligent software, environmental influences are minimised effectively, making the XP extremely stable even in harsh environments. proFACT adjusts the balance automatically for extremely precise and repeatable results. With the XP you get your work done much faster – and more accurately.

### Process security

If repeatability of your processes is crucial – for example when mixing dyes – the accuracy of small sample quantities is essential. If the defined minimum weight is not reached, the XP sends a MinWeigh warning to the display – thereby preventing process deviations and their associated costs.

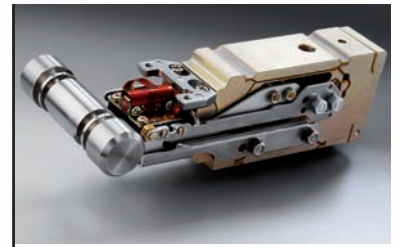
### Ruggedness to rely on

No matter where your balance is used, the rugged construction of the XP can be relied on. It also has uncompromising protection against dust and water, which in use is equivalent to IP54.



Removable terminal, large and flat surfaces: the XP is designed for fast and easy cleaning.

Sealed interfaces, screw-in power cable.  
Keep water and dust out – for protection  
equivalent to IP54.



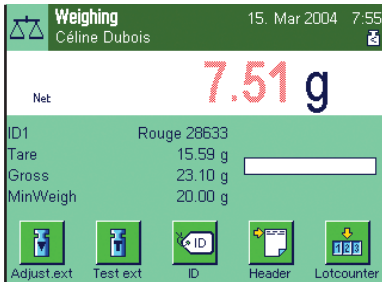
## Perfection in detail



Once level, always level –  
thanks to the stabilizing safety  
feet which are easy to lower  
and lock.

## Outstanding measurement performance

A separate processor brings the  
MonoBloc<sup>HighSpeed</sup> weighing cell up  
to maximum speed, and thanks  
to overload protection even heavy  
loads cannot damage the XP.



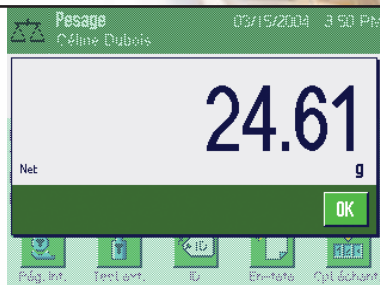
## Process security thanks to MinWeigh

The XP warns if the minimum  
weight is not reached. With red  
figures and the symbol in the  
display.



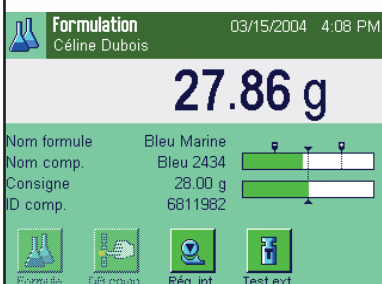
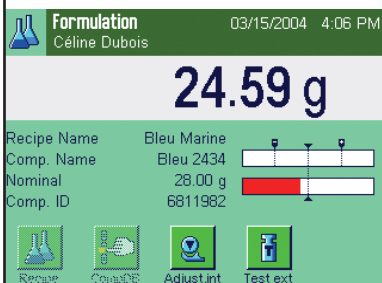
## Always readable

20 mm high, brightly  
backlit figures –  
selectable at a touch.



## Clear user guidance

prevents mistakes. Fast and certain  
dye mixing thanks to clear guidance  
in red and green.



# One Balance, Many Solutions

- Infrared sensors for hands-free operation
- Freely placeable, adjustable-slope operating terminal
- Separate weighing platforms for system integration
- Built-in applications, comprehensive assortment



"My XP is just great! The hands-free operation makes weighing toxic substances easier and safer. And I've placed my wireless printer outside the laminar-flow bench so my printouts don't get contaminated."

**Ralf Sommer, Germany**

## Tailored solutions

Just as there are different users with individual needs, the demands placed on balances are different too. So it's good if your balance is sufficiently flexible. A variety of accessories, diversity of interfaces and practical software applications make the Excellence Plus XP the first choice when tailored solutions are called for.

## Remote operation included

Thanks to SmartSens, the two infrared sensors built into the XP's operating terminal, hands-free operation becomes possible.

A wave of the hand is sufficient to tare the balance or send your results to the printer – depending on which of the many functions you have assigned to the individually programmable sensors.

## Visible ergonomics

The freely positionable ErgoSens infrared sensors, available as accessories, follow your instructions exactly and allow individual settings. You always have both hands free, which makes handling of toxic or sticky substances easier and safer.

## Modularity to fit

The XP's operating terminal can be separated from the weighing platform and be placed next to the balance or above it, which is ideal when weighing high containers or if space is limited.



Just practical: the stand for the XP which is available as an accessory.





### System integration

The weighing platform of the XP precision balance is also available separately. Compact, robust and with outstanding weighing performance, it is ideal for system integration.

► [www.mt.com/x-platform](http://www.mt.com/x-platform)



### ErgoSens

Freely placeable, individually configurable – for hands-free operation of the XP from a distance. The illuminated green symbol shows that ErgoSens is activated and set to "Print".



### Bluetooth printer

Thanks to wireless connection to the balance, the printer can be placed outside the laminar flow bench so that printouts are not contaminated.

### SmartSens

Brief movement of a hand over one of the sensors is all it needs: the programmed command is executed immediately. Different functions can be individually programmed right and left for every user and every application.



### Compact draft shield

The sliding doors are easy to open and allow free access to the weighing chamber as well as convenient cleaning. The doors never project beyond the back of the balance, which saves valuable space.

# Connection Guaranteed

- **RS232C interface built-in as standard**
- **Optional second interface**
- **Bluetooth for wireless communication**
- **Ethernet for networked solutions**

## Increasing data flow

Quality guidelines demand seamless recording of sample and process data. Ideally, reading devices from different manufacturers need to be linked seamlessly, the balance easily integrated into networks and existing PC-based software solutions supported.

## Total compatibility

The Excellence Plus XP was developed with the goal of effortless integration into a networked world. Whether trendsetting wireless communications based on the Bluetooth standard or network solutions via Ethernet: the flexible interface concept guarantees connection and compatibility.

## Flexible interfaces

All balances are equipped as standard with a sealed RS232C interface, two auxiliary connections for various switches and a slot for a second, optional interface. Seven types of interface are available.

## Flexible and powerful data management

With LabX balance PC software you save all the time spent for manual weight transcription and re-transcription into a LIMS or an application software. And weighing still remains simple for you: Just press the print button of the balance to transfer data to the LabX database or to any destination automatically!

Because all balances can be connected to the LabX network, you can manage users and weighing applications centrally while ensuring proper calibration practices in your lab. The data is stored in an industry-standard database and is instantly available for viewing or reporting from anywhere in the lab or office.

LabX balance not only enhances productivity and supports regulatory needs, it also helps to prevent costly or dangerous mistakes.



"LabX, the software solution for 21 CFR Part 11."

Julie Evans



"It's ideal how it connects to our network."

Céline Dubois



"Wireless at last – brilliant!"  
Ralf Sommer



## Bluetooth™

The XP can wirelessly address up to seven instruments simultaneously from a distance of 10 meters. The choice ranges from a printer, barcode reader, or auxiliary display, to a PC.



### Plug and weigh!

Commercial keyboards and barcode readers – wireless ones too – just plug in and start weighing. The flexible interface concept of the XP makes it possible.



#### Optional interfaces

Ethernet	Supports dynamic IP addresses
BTS	Bluetooth standard option (point-point connection)
BT	Bluetooth option (addresses up to seven instruments)
RS232C	Allows connection of printer (RS-P42), PC and others
PS/2	Enables connection of commercial keyboards and barcode readers
LC	LocalCan interface from METTLER TOLEDO. Allows simultaneous connection of up to five peripheral devices.
MM	MiniMettler interface for backward compatibility
USB	USB-232 converter, an intelligent expansion module that connects to a PC USB port.

### Choice of second interface

Bluetooth, Ethernet or USB: the XP guarantees to connect. Choose one of seven possible auxiliary interfaces, plug it in – and that's it.

# Excellent Values, Complete Program

## Standard equipment

- Backlit color graphics display with touchscreen operation
- 2 infrared sensors for hands-free operation of the balance, with status display
- MonoBlocHighspeed weighing cell with overload protection
- proFACT fully automatic temperature- and/or time controlled internal adjustment
- Overload protection
- Weighing pan made from stainless steel, with draft ring or draft shield depending on resolution
- Fold-out stabilizing feet for all 10 mg and 0.1g models
- RS232C interface and two auxiliary connections built in. Slot for second freely selectable interface (7 options)
- Protective cover for terminal and weighing platform
- Feedthrough for below-the-balance weighing
- Power supply with AC/DC adapter, primary 100–240V, –15%/+10%, 50/60Hz, 0.8A, secondary 12VDC  $\pm$ 5%, 2.25A (with electronic overload protection)
- Country-specific power cable
- Production certificate
- LevelControl warns if the balance is not correctly leveled



## All models can/have

- Download software via the Internet
- Display different weighing units
- Be tared over the entire weighing range
- Be adapted to the environment
- Be adapted to the weighing type
- Statistics application with  $\pm$  and % display
- Piece-counting application with reference optimization
- Formula-weighing application with security check
- Application percent weighing
- Application dynamic weighing
- Application density determination
- Application differential weighing
- Factor calculation
- 8 individually configurable user profiles
- User management and password protection for 8 users
- Change/adjustment history
- Prompting function for calibration with external weight
- MinWeigh, determined according to different methods
- Alphanumeric identification
- 4 IDs per sample
- Documentation to GxP
- Communicate in 7 languages: e, g, f, i, sp, jap, russ
- All models available in approved versions
- Direct connection to the LabX PC software

Technical data	XP204S	XP404S	XP404SDR
Stand alone weighing platform	X204S	X404S	X404SDR
<b>Limit values</b>			
Maximum capacity	210 g	410 g	410 g
Maximum capacity, fine range	—	—	80 g
Readability	0.1 mg	0.1 mg	1 mg
Readability, fine range	—	—	0.1 mg
Repeatability (sd)	0.2 mg	0.1 mg	0.6 mg
Repeatability, fine range (sd)	—	—	0.1 mg
Linearity	0.2 mg	0.2 mg	0.6 mg
Eccentric load deviation (measured at)	0.3 mg (100 g)	0.3 mg (200 g)	1 mg (200 g)
Sensitivity offset	$5 \times 10^{-6} \bullet \text{Rnt}$	$5 \times 10^{-6} \bullet \text{Rnt}$	$5 \times 10^{-6} \bullet \text{Rnt}$
Sensitivity temperature drift <sup>1)</sup>	$1.5 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rnt}$	$1.5 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rnt}$	$1.5 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rnt}$
Sensitivity stability <sup>2)</sup>	$2.5 \times 10^{-6} / \text{a} \bullet \text{Rnt}$	$2.5 \times 10^{-6} / \text{a} \bullet \text{Rnt}$	$2.5 \times 10^{-6} / \text{a} \bullet \text{Rnt}$
Interface update rate	23/s	23/s	23/s

## Typical values for determination of the measurement uncertainty

Repeatability <sup>3)</sup> (sd)	0.12 mg + $1.5 \times 10^{-7} \bullet \text{Rgr}$	0.06 mg + $5 \times 10^{-8} \bullet \text{Rgr}$	0.4 mg + $2.5 \times 10^{-7} \bullet \text{Rgr}$
Differential linearity deviation (sd)	$\sqrt{6} \times 10^{-12} \text{ g} \bullet \text{Rnt}$	$\sqrt{3} \times 10^{-12} \text{ g} \bullet \text{Rnt}$	$\sqrt{3} \times 10^{-12} \text{ g} \bullet \text{Rnt}$
Differential eccentric load deviation (sd)	$4 \times 10^{-7} \bullet \text{Rnt}$	$2 \times 10^{-7} \bullet \text{Rnt}$	$2 \times 10^{-7} \bullet \text{Rnt}$
Sensitivity offset (sd)	$1 \times 10^{-6} \bullet \text{Rnt}$	$6 \times 10^{-7} \bullet \text{Rnt}$	$6 \times 10^{-7} \bullet \text{Rnt}$
Minimum weight (acc. to USP) <sup>3)</sup>	360 mg + $4.5 \times 10^{-4} \bullet \text{Rgr}$	180 mg + $1.5 \times 10^{-4} \bullet \text{Rgr}$	1.2 g + $7.5 \times 10^{-4} \bullet \text{Rgr}$
Minimum weight (acc. to USP), fine range <sup>3)</sup>	—	—	180 mg + $7.5 \times 10^{-4} \bullet \text{Rgr}$
Minimum weight (U = 1%, 2 sd) <sup>3)</sup>	24 mg + $3 \times 10^{-5} \bullet \text{Rgr}$	12 mg + $1 \times 10^{-5} \bullet \text{Rgr}$	80 mg + $5 \times 10^{-5} \bullet \text{Rgr}$
Minimum weight (U = 1%, 2 sd), fine range <sup>3)</sup>	—	—	12 mg + $5 \times 10^{-5} \bullet \text{Rgr}$
Settling time	2 s	2 s	2 s

Rgr = gross weight, Rnt = net weight, sd = standard deviation, a = year (annum)

<sup>1)</sup> In temperature range from 10...30 °C

<sup>2)</sup> Stability of sensitivity as from first installation with proFACT automatic adjustment switched on

<sup>3)</sup> Valid for compact objects; depends heavily on shape and size of weighing object and environmental conditions



Technical data	XP203S	XP603S	XP603SDR	XP1203S	XP2003SDR	XP5003SDR
Stand alone weighing platform	X203S	X603S	X603SDR	X1203S	X2003SDR	X5003SDR
<b>Limit values</b>						
Maximum capacity	210 g	610 g	610 g	1.21 kg	2.1 kg	5.1 kg
Maximum capacity, fine range	—	—	120 g	—	500 g	1 kg
Readability	1 mg	1 mg	10 mg	1 mg	10 mg	10 mg
Readability, fine range	—	—	1 mg	—	1 mg	1 mg
Repeatability (sd)	0.9 mg	0.9 mg	6 mg	0.8 mg	6 mg	6 mg
Repeatability, fine range (sd)	—	—	1 mg	—	1 mg	1 mg
Linearity	2 mg	2 mg	10 mg	2 mg	6 mg	6 mg
Eccentric load deviation (measured at)	3 mg (100 g)	3 mg (200 g)	10 mg (200 g)	3 mg (500 g)	10 mg (1 kg)	10 mg (2 kg)
Sensitivity offset	$2.5 \times 10^{-5} \bullet \text{Rnt}$	$7.5 \times 10^{-6} \bullet \text{Rnt}$	$1.5 \times 10^{-5} \bullet \text{Rnt}$	$5 \times 10^{-6} \bullet \text{Rnt}$	$5 \times 10^{-6} \bullet \text{Rnt}$	$4 \times 10^{-6} \bullet \text{Rnt}$
Sensitivity temperature drift <sup>1)</sup>	$5 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rnt}$	$2 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rnt}$	$2 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rnt}$	$2 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rnt}$	$3 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rnt}$	$3 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rnt}$
Sensitivity stability <sup>2)</sup>	$2.5 \times 10^{-5} / \text{a} \bullet \text{Rnt}$	$1 \times 10^{-5} / \text{a} \bullet \text{Rnt}$	$1 \times 10^{-5} / \text{a} \bullet \text{Rnt}$	$1 \times 10^{-5} / \text{a} \bullet \text{Rnt}$	$2.5 \times 10^{-5} / \text{a} \bullet \text{Rnt}$	$1.5 \times 10^{-5} / \text{a} \bullet \text{Rnt}$
Interface update rate	23/s	23/s	23/s	23/s	23/s	23/s

#### Typical values for determination of the measurement uncertainty

Repeatability <sup>3)</sup> (sd)	$0.5 \text{ mg} + 1.5 \times 10^{-6} \bullet \text{Rgr}$	$0.5 \text{ mg} + 5 \times 10^{-7} \bullet \text{Rgr}$	$4 \text{ mg} + 1.5 \times 10^{-6} \bullet \text{Rgr}$	$0.4 \text{ mg} + 1.5 \times 10^{-7} \bullet \text{Rgr}$	$4 \text{ mg} + 5 \times 10^{-7} \bullet \text{Rgr}$	$4 \text{ mg} + 2 \times 10^{-7} \bullet \text{Rgr}$
Differential linearity deviation (sd)	$\sqrt{6} \times 10^{-10} \text{ g} \bullet \text{Rnt}$	$\sqrt{2} \times 10^{-10} \text{ g} \bullet \text{Rnt}$	$\sqrt{2} \times 10^{-10} \text{ g} \bullet \text{Rnt}$	$\sqrt{1} \times 10^{-10} \text{ g} \bullet \text{Rnt}$	$\sqrt{6} \times 10^{-11} \text{ g} \bullet \text{Rnt}$	$\sqrt{5} \times 10^{-11} \text{ g} \bullet \text{Rnt}$
Differential eccentric load deviation (sd)	$2 \times 10^{-6} \bullet \text{Rnt}$	$1.5 \times 10^{-6} \bullet \text{Rnt}$	$1.5 \times 10^{-6} \bullet \text{Rnt}$	$6 \times 10^{-7} \bullet \text{Rnt}$	$3 \times 10^{-7} \bullet \text{Rnt}$	$1.5 \times 10^{-7} \bullet \text{Rnt}$
Sensitivity offset (sd)	$8 \times 10^{-6} \bullet \text{Rnt}$	$2.5 \times 10^{-6} \bullet \text{Rnt}$	$5 \times 10^{-6} \bullet \text{Rnt}$	$1.2 \times 10^{-6} \bullet \text{Rnt}$	$8 \times 10^{-7} \bullet \text{Rnt}$	$1 \times 10^{-6} \bullet \text{Rnt}$
Minimum weight (acc. to USP) <sup>3)</sup>	$1.5 \text{ g} + 4.5 \times 10^{-3} \bullet \text{Rgr}$	$1.5 \text{ g} + 1.5 \times 10^{-3} \bullet \text{Rgr}$	$12 \text{ g} + 4.5 \times 10^{-3} \bullet \text{Rgr}$	$1.2 \text{ g} + 4.5 \times 10^{-4} \bullet \text{Rgr}$	$12 \text{ g} + 1.5 \times 10^{-3} \bullet \text{Rgr}$	$12 \text{ g} + 6 \times 10^{-4} \bullet \text{Rgr}$
Minimum weight (acc. to USP), fine range <sup>3)</sup>	—	—	$6 \text{ g} + 1.2 \times 10^{-2} \bullet \text{Rgr}$	—	$1.8 \text{ g} + 1.2 \times 10^{-3} \bullet \text{Rgr}$	$1.8 \text{ g} + 6 \times 10^{-4} \bullet \text{Rgr}$
Minimum weight (U = 1%, 2 sd) <sup>3)</sup>	$100 \text{ mg} + 3 \times 10^{-4} \bullet \text{Rgr}$	$100 \text{ mg} + 1 \times 10^{-4} \bullet \text{Rgr}$	$800 \text{ mg} + 3 \times 10^{-4} \bullet \text{Rgr}$	$80 \text{ mg} + 3 \times 10^{-5} \bullet \text{Rgr}$	$800 \text{ mg} + 1 \times 10^{-4} \bullet \text{Rgr}$	$800 \text{ mg} + 4 \times 10^{-5} \bullet \text{Rgr}$
Minimum weight (U = 1%, 2 sd), fine range <sup>3)</sup>	—	—	$400 \text{ mg} + 8 \times 10^{-4} \bullet \text{Rgr}$	—	$120 \text{ mg} + 8 \times 10^{-5} \bullet \text{Rgr}$	$120 \text{ mg} + 4 \times 10^{-5} \bullet \text{Rgr}$
Settling time	1.5 s	1.5 s	1.5 s	1.5 s	2 s	2 s



Technical data	XP802S	XP1202S	XP2002S	XP4002S	XP4002SDR
Stand alone weighing platform	—	X1202S	—	X4002S	—
<b>Limit values</b>					
Maximum capacity	810 g	1.21 kg	2.1 kg	4.1 kg	4.1 kg
Maximum capacity, fine range	—	—	—	—	800 g
Readability	10 mg	10 mg	10 mg	10 mg	0.1 g
Readability, fine range	—	—	—	—	0.01 g
Repeatability (sd)	8 mg	8 mg	8 mg	8 mg	0.06 g
Repeatability, fine range (sd)	—	—	—	—	0.008 g
Linearity	20 mg	20 mg	20 mg	20 mg	60 mg
Eccentric load deviation (measured at)	20 mg (500 g)	20 mg (500 g)	30 mg (1 kg)	30 mg (2 kg)	0.1 g (2 kg)
Sensitivity offset	$7.5 \times 10^{-5} \bullet \text{Rgr}$	$5 \times 10^{-5} \bullet \text{Rgr}$	$3 \times 10^{-5} \bullet \text{Rgr}$	$1.5 \times 10^{-5} \bullet \text{Rgr}$	$1.5 \times 10^{-5} \bullet \text{Rgr}$
Sensitivity temperature drift <sup>1)</sup>	$3 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rgr}$	$3 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rgr}$	$3 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rgr}$	$3 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rgr}$	$3 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rgr}$
Sensitivity stability <sup>2)</sup>	$2.5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$2.5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$2.5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$1.5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$1.5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$
Interface update rate	23/s	23/s	23/s	23/s	23/s

#### Typical values for determination of the measurement uncertainty

Repeatability <sup>3)</sup> (sd)	$0.004 \text{ g} + 2.5 \times 10^{-6} \bullet \text{Rgr}$	$4 \text{ mg} + 1.5 \times 10^{-6} \bullet \text{Rgr}$	$0.004 \text{ g} + 1 \times 10^{-6} \bullet \text{Rgr}$	$4 \text{ mg} + 5 \times 10^{-7} \bullet \text{Rgr}$	$0.04 \text{ g} + 2.5 \times 10^{-6} \bullet \text{Rgr}$
Differential linearity deviation (sd)	$\sqrt{1.5} \times 10^{-8} \text{ g} \bullet \text{Rnt}$	$\sqrt{1} \times 10^{-8} \text{ g} \bullet \text{Rnt}$	$\sqrt{6} \times 10^{-9} \text{ g} \bullet \text{Rnt}$	$\sqrt{3} \times 10^{-9} \text{ g} \bullet \text{Rnt}$	$\sqrt{3} \times 10^{-9} \text{ g} \bullet \text{Rnt}$
Differential eccentric load deviation (sd)	$3 \times 10^{-6} \bullet \text{Rnt}$	$3 \times 10^{-6} \bullet \text{Rnt}$	$1.5 \times 10^{-6} \bullet \text{Rnt}$	$1.5 \times 10^{-6} \bullet \text{Rnt}$	$1.5 \times 10^{-6} \bullet \text{Rnt}$
Sensitivity offset (sd)	$2 \times 10^{-5} \bullet \text{Rnt}$	$1 \times 10^{-5} \bullet \text{Rnt}$	$8 \times 10^{-6} \bullet \text{Rnt}$	$4 \times 10^{-6} \bullet \text{Rnt}$	$4 \times 10^{-6} \bullet \text{Rnt}$
Minimum weight (acc. to USP) <sup>3)</sup>	$12 \text{ g} + 7.5 \times 10^{-3} \bullet \text{Rgr}$	$12 \text{ g} + 4.5 \times 10^{-3} \bullet \text{Rgr}$	$12 \text{ g} + 3 \times 10^{-3} \bullet \text{Rgr}$	$12 \text{ g} + 1.5 \times 10^{-3} \bullet \text{Rgr}$	$120 \text{ g} + 7.5 \times 10^{-3} \bullet \text{Rgr}$
Minimum weight (acc. to USP), fine range <sup>3)</sup>	—	—	—	—	$12 \text{ g} + 7.5 \times 10^{-3} \bullet \text{Rgr}$
Minimum weight (U = 1%, 2 sd) <sup>3)</sup>	$0.8 \text{ g} + 5 \times 10^{-4} \bullet \text{Rgr}$	$800 \text{ mg} + 3 \times 10^{-4} \bullet \text{Rgr}$	$0.8 \text{ g} + 2 \times 10^{-4} \bullet \text{Rgr}$	$800 \text{ mg} + 1 \times 10^{-4} \bullet \text{Rgr}$	$8 \text{ g} + 5 \times 10^{-4} \bullet \text{Rgr}$
Minimum weight (U = 1%, 2 sd), fine range <sup>3)</sup>	—	—	—	—	$0.8 \text{ g} + 5 \times 10^{-4} \bullet \text{Rgr}$
Settling time	1.2 s	1.2 s	1.2 s	1.2 s	1.2 s

Rgr = gross weight, Rnt = net weight, sd = standard deviation, a = year (annum)

<sup>1)</sup> In temperature range from 10...30 °C

<sup>2)</sup> Stability of sensitivity as from first installation with proFACT automatic adjustment switched on

<sup>3)</sup> Valid for compact objects; depends heavily on shape and size of weighing object and environmental conditions



Technical data	XP6002S	XP6002SDR	XP8002S	XP10002S	XP10002SDR
Stand alone weighing platform	X6002S	X6002SDR	X8002S	X10002S	X10002SDR
<b>Limit values</b>					
Maximum capacity	6.1 kg	6.1 kg	8.1 kg	10.1 kg	10.1 kg
Maximum capacity, fine range	—	1.2 kg	—	—	2 kg
Readability	10 mg	0.1 g	10 mg	10 mg	0.1 g
Readability, fine range	—	10 mg	—	—	10 mg
Repeatability (sd)	8 mg	60 mg	8 mg	8 mg	60 mg
Repeatability, fine range (sd)	—	8 mg	—	—	8 mg
Linearity	20 mg	0.1 g	20 mg	20 mg	50 mg
Eccentric load deviation (measured at)	30 mg (2 kg)	0.1 g (2 kg)	40 mg (5 kg)	40 mg (5 kg)	0.1 g (5 kg)
Sensitivity offset	1x10 <sup>-6</sup> •Rgr	2.5x10 <sup>-5</sup> •Rgr	7.5x10 <sup>-6</sup> •Rgr	5x10 <sup>-6</sup> •Rgr	7.5x10 <sup>-6</sup> •Rgr
Sensitivity temperature drift <sup>1)</sup>	3x10 <sup>-6</sup> /°C•Rgr	3x10 <sup>-6</sup> /°C•Rgr	2.5x10 <sup>-6</sup> /°C•Rgr	2.5x10 <sup>-6</sup> /°C•Rgr	2.5x10 <sup>-6</sup> /°C•Rgr
Sensitivity stability <sup>2)</sup>	1.5x10 <sup>-5</sup> /a•Rgr	1.5x10 <sup>-5</sup> /a•Rgr	1.5x10 <sup>-5</sup> /a•Rgr	1.5x10 <sup>-5</sup> /a•Rgr	1.5x10 <sup>-5</sup> /a•Rgr
Interface update rate	23/s	23/s	23/s	23/s	23/s

**Typical values for determination of the measurement uncertainty**

Repeatability <sup>3)</sup> (sd)	4 mg+3x10 <sup>-7</sup> •Rgr	40 mg+1.5x10 <sup>-6</sup> •Rgr	4 mg+2.5x10 <sup>-7</sup> •Rgr	4 mg+2x10 <sup>-7</sup> •Rgr	40 mg+1x10 <sup>-6</sup> •Rgr
Differential linearity deviation (sd)	√2x10 <sup>-9</sup> g•Rntf	√2x10 <sup>-9</sup> g•Rntf	√1.5x10 <sup>-9</sup> g•Rntf	√1x10 <sup>-9</sup> g•Rntf	√4x10 <sup>-9</sup> g•Rntf
Differential eccentric load deviation (sd)	1.5x10 <sup>-6</sup> •Rnt	1.5x10 <sup>-6</sup> •Rnt	8x10 <sup>-7</sup> •Rnt	8x10 <sup>-7</sup> •Rnt	8x10 <sup>-7</sup> •Rnt
Sensitivity offset (sd)	2.5x10 <sup>-6</sup> •Rnt	2.5x10 <sup>-6</sup> •Rnt	2x10 <sup>-6</sup> •Rnt	1.5x10 <sup>-6</sup> •Rnt	1.5x10 <sup>-6</sup> •Rnt
Minimum weight (acc. to USP) <sup>3)</sup>	12 g+9x10 <sup>-4</sup> •Rgr	120 g+4.5x10 <sup>-3</sup> •Rgr	12 g+7.5x10 <sup>-4</sup> •Rgr	12 g+6x10 <sup>-4</sup> •Rgr	120 g+3x10 <sup>-3</sup> •Rgr
Minimum weight (acc. to USP), fine range <sup>3)</sup>	—	12 g+4.5x10 <sup>-3</sup> •Rgr	—	—	12 g+3x10 <sup>-3</sup> •Rgr
Minimum weight (U =1%, 2 sd) <sup>3)</sup>	800 mg+6x10 <sup>-5</sup> •Rgr	8 g+3x10 <sup>-4</sup> •Rgr	800 mg+5x10 <sup>-5</sup> •Rgr	800 mg+4x10 <sup>-5</sup> •Rgr	8 g+2x10 <sup>-4</sup> •Rgr
Minimum weight (U =1%, 2 sd), fine range <sup>3)</sup>	—	800 mg+3x10 <sup>-4</sup> •Rgr	—	—	800 mg+2x10 <sup>-4</sup> •Rgr
Settling time	1.2 s	1.2 s	1.5 s	1.5 s	1.5 s



Technical data	XP2001S	XP4001S	XP6001S	XP8001S	XP10001S
Stand alone weighing platform	—	X4001S	X6001S	X8001S	X10001S
<b>Limit values</b>					
Maximum capacity	2.1 kg	4.1 kg	6.1 kg	8.1 kg	10.1 kg
Maximum capacity, fine range	—	—	—	—	—
Readability	0.1 g	0.1 g	0.1 g	0.1 g	0.1 g
Readability, fine range	—	—	—	—	—
Repeatability (sd)	0.08 g	80 mg	80 mg	80 mg	80 mg
Repeatability, fine range (sd)	—	—	—	—	—
Linearity	0.06 g	60 mg	60 mg	0.1 g	0.1 g
Eccentric load deviation (measured at)	0.1 g (1 kg)	0.2 g (2 kg)	0.2 g (2 kg)	0.2 g (5 kg)	0.2 g (5 kg)
Sensitivity offset	7.5x10 <sup>-5</sup> •Rgr	6x10 <sup>-5</sup> •Rgr	4x10 <sup>-5</sup> •Rgr	7.5x10 <sup>-5</sup> •Rgr	5x10 <sup>-5</sup> •Rgr
Sensitivity temperature drift <sup>1)</sup>	1.5x10 <sup>-5</sup> /°C•Rgr	1.5x10 <sup>-5</sup> /°C•Rgr	1.5x10 <sup>-5</sup> /°C•Rgr	1.5x10 <sup>-5</sup> /°C•Rgr	1.5x10 <sup>-5</sup> /°C•Rgr
Sensitivity stability <sup>2)</sup>	5x10 <sup>-5</sup> /a•Rgr	5x10 <sup>-5</sup> /a•Rgr	5x10 <sup>-5</sup> /a•Rgr	5x10 <sup>-5</sup> /a•Rgr	5x10 <sup>-5</sup> /a•Rgr
Interface update rate	23/s	23/s	23/s	23/s	23/s

**Typical values for determination of the measurement uncertainty**

Repeatability <sup>3)</sup> (sd)	0.04 g+1x10 <sup>-5</sup> •Rgr	40 mg+5x10 <sup>-6</sup> •Rgr	40 mg+3x10 <sup>-6</sup> •Rgr	40 mg+2.5x10 <sup>-6</sup> •Rgr	40 mg+2x10 <sup>-6</sup> •Rgr
Differential linearity deviation (sd)	√5x10 <sup>-8</sup> g•Rntf	√2.5x10 <sup>-8</sup> g•Rntf	√1.5x10 <sup>-8</sup> g•Rntf	√3.5x10 <sup>-8</sup> g•Rntf	√3x10 <sup>-8</sup> g•Rntf
Differential eccentric load deviation (sd)	1x10 <sup>-5</sup> •Rnt	8x10 <sup>-6</sup> •Rnt	8x10 <sup>-6</sup> •Rnt	3x10 <sup>-6</sup> •Rnt	3x10 <sup>-6</sup> •Rnt
Sensitivity offset (sd)	2x10 <sup>-5</sup> •Rnt	2x10 <sup>-5</sup> •Rnt	1.2x10 <sup>-5</sup> •Rnt	2x10 <sup>-5</sup> •Rnt	1.5x10 <sup>-5</sup> •Rnt
Minimum weight (acc. to USP) <sup>3)</sup>	120 g+3x10 <sup>-2</sup> •Rgr	120 g+1.5x10 <sup>-2</sup> •Rgr	120 g+9x10 <sup>-3</sup> •Rgr	120 g+7.5x10 <sup>-3</sup> •Rgr	120 g+6x10 <sup>-3</sup> •Rgr
Minimum weight (acc. to USP), fine range <sup>3)</sup>	—	—	—	—	—
Minimum weight (U =1%, 2 sd) <sup>3)</sup>	8 g+2x10 <sup>-3</sup> •Rgr	8 g+1x10 <sup>-3</sup> •Rgr	8 g+6x10 <sup>-4</sup> •Rgr	8 g+5x10 <sup>-4</sup> •Rgr	8 g+4x10 <sup>-4</sup> •Rgr
Minimum weight (U =1%, 2 sd), fine range <sup>3)</sup>	—	—	—	—	—
Settling time	0.8 s	0.8 s	0.8 s	1 s	1 s

Rgr = gross weight, Rnt = net weight, sd = standard deviation, a = year (annum)

<sup>1)</sup> In temperature range from 10...30 °C

<sup>2)</sup> Stability of sensitivity as from first installation with proFACT automatic adjustment switched on

<sup>3)</sup> Valid for compact objects; depends heavily on shape and size of weighing object and environmental conditions



Technical data	XP6002MDR	XP12002MDR	XP8001M	XP8001MDR	XP12001M
Stand alone weighing platform	—	X12002MDR	X8001M	—	X12001M
<b>Limit values</b>					
Maximum capacity	6.1 kg	12.1 kg	8.1 kg	8.1 kg	12.1 kg
Maximum capacity, fine range	1.2 kg	2.4 kg	—	1.6 kg	—
Readability	0.1 g	0.1 g	0.1 g	1 g	0.1 g
Readability, fine range	10 mg	10 mg	—	0.1 g	—
Repeatability (sd)	60 mg	60 mg	80 mg	0.6 g	80 mg
Repeatability, fine range (sd)	10 mg	10 mg	—	80 mg	—
Linearity	60 mg	60 mg	0.1 g	0.6 g	0.1 g
Eccentric load deviation (measured at)	0.1 g (2 kg)	0.1 g (5 kg)	0.2 g (5 kg)	1 g (5 kg)	0.2 g (5 kg)
Sensitivity offset	$2.5 \times 10^{-5} \bullet \text{Rgr}$	$8 \times 10^{-6} \bullet \text{Rgr}$	$7.5 \times 10^{-5} \bullet \text{Rgr}$	$7.5 \times 10^{-5} \bullet \text{Rgr}$	$5 \times 10^{-5} \bullet \text{Rgr}$
Sensitivity temperature drift <sup>1)</sup>	$3 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rgr}$	$2.5 \times 10^{-6} / ^\circ\text{C} \bullet \text{Rgr}$	$1.5 \times 10^{-5} / ^\circ\text{C} \bullet \text{Rgr}$	$1.5 \times 10^{-5} / ^\circ\text{C} \bullet \text{Rgr}$	$1.5 \times 10^{-5} / ^\circ\text{C} \bullet \text{Rgr}$
Sensitivity stability <sup>2)</sup>	$1.5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$1.5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$
Interface update rate	23/s	23/s	23/s	23/s	23/s

#### Typical values for determination of the measurement uncertainty

Repeatability <sup>3)</sup> (sd)	$40 \text{ mg} + 1.5 \times 10^{-6} \bullet \text{Rgr}$	$40 \text{ mg} + 8 \times 10^{-7} \bullet \text{Rgr}$	$40 \text{ mg} + 2.5 \times 10^{-6} \bullet \text{Rgr}$	$400 \text{ mg} + 1.2 \times 10^{-5} \bullet \text{Rgr}$	$40 \text{ mg} + 1.5 \times 10^{-6} \bullet \text{Rgr}$
Differential linearity deviation (sd)	$\sqrt{2} \times 10^{-9} \text{ g} \bullet \text{Rnt}$	$\sqrt{1} \times 10^{-9} \text{ g} \bullet \text{Rnt}$	$\sqrt{4} \times 10^{-8} \text{ g} \bullet \text{Rnt}$	$\sqrt{4} \times 10^{-8} \text{ g} \bullet \text{Rnt}$	$\sqrt{2.5} \times 10^{-8} \text{ g} \bullet \text{Rnt}$
Differential eccentric load deviation (sd)	$2.5 \times 10^{-6} \bullet \text{Rnt}$	$1 \times 10^{-6} \bullet \text{Rnt}$	$3 \times 10^{-6} \bullet \text{Rnt}$	$3 \times 10^{-6} \bullet \text{Rnt}$	$3 \times 10^{-6} \bullet \text{Rnt}$
Sensitivity offset (sd)	$5 \times 10^{-6} \bullet \text{Rnt}$	$2.5 \times 10^{-6} \bullet \text{Rnt}$	$2 \times 10^{-5} \bullet \text{Rnt}$	$2 \times 10^{-5} \bullet \text{Rnt}$	$1.2 \times 10^{-5} \bullet \text{Rnt}$
Minimum weight (acc. to USP) <sup>3)</sup>	$120 \text{ g} + 4.5 \times 10^{-3} \bullet \text{Rgr}$	$120 \text{ g} + 2.4 \times 10^{-3} \bullet \text{Rgr}$	$120 \text{ g} + 7.5 \times 10^{-3} \bullet \text{Rgr}$	$1200 \text{ g} + 3.6 \times 10^{-2} \bullet \text{Rgr}$	$120 \text{ g} + 4.5 \times 10^{-3} \bullet \text{Rgr}$
Minimum weight (acc. to USP), fine range <sup>3)</sup>	$18 \text{ g} + 4.5 \times 10^{-3} \bullet \text{Rgr}$	$18 \text{ g} + 2.4 \times 10^{-3} \bullet \text{Rgr}$	—	$120 \text{ g} + 3.6 \times 10^{-2} \bullet \text{Rgr}$	—
Minimum weight (U = 1%, 2 sd) <sup>3)</sup>	$8 \text{ g} + 3 \times 10^{-4} \bullet \text{Rgr}$	$8 \text{ g} + 1.6 \times 10^{-4} \bullet \text{Rgr}$	$8 \text{ g} + 5 \times 10^{-4} \bullet \text{Rgr}$	$80 \text{ g} + 2.4 \times 10^{-3} \bullet \text{Rgr}$	$8 \text{ g} + 3 \times 10^{-4} \bullet \text{Rgr}$
Minimum weight (U = 1%, 2 sd), fine range <sup>3)</sup>	$1.2 \text{ g} + 3 \times 10^{-4} \bullet \text{Rgr}$	$1.2 \text{ g} + 1.6 \times 10^{-4} \bullet \text{Rgr}$	—	$8 \text{ g} + 2.4 \times 10^{-3} \bullet \text{Rgr}$	—
Settling time	1.5 s	1.8 s	1.2 s	1.2 s	1.2 s



Technical data	XP16001M	XP16001MDR	XP20001M	XP12000M	XP20000M
Stand alone weighing platform	—	—	X20001M	X12000M	X20000M
<b>Limit values</b>					
Maximum capacity	16.1 kg	16.1 kg	20.1 kg	12.1 kg	20.1 kg
Maximum capacity, fine range	—	3200 g	—	—	—
Readability	0.1 g	1 g	0.1 g	1 g	1 g
Readability, fine range	—	0.1 g	—	—	—
Repeatability (sd)	0.08 g	0.6 g	0.08 g	0.6 g	0.6 g
Repeatability, fine range (sd)	—	0.08 g	—	—	—
Linearity	0.2 g	0.6 g	0.2 g	0.6 g	0.6 g
Eccentric load deviation (measured at)	0.2 g (5 kg)	1 g (5 kg)	0.2 g (10 kg)	1 g (5 kg)	1 g (10 kg)
Sensitivity offset	$5 \times 10^{-5} \bullet \text{Rgr}$	$5 \times 10^{-5} \bullet \text{Rgr}$	$4 \times 10^{-5} \bullet \text{Rgr}$	$5 \times 10^{-5} \bullet \text{Rgr}$	$4 \times 10^{-5} \bullet \text{Rgr}$
Sensitivity temperature drift <sup>1)</sup>	$1.5 \times 10^{-5} / ^\circ\text{C} \bullet \text{Rgr}$	$1.5 \times 10^{-5} / ^\circ\text{C} \bullet \text{Rgr}$	$1.5 \times 10^{-5} / ^\circ\text{C} \bullet \text{Rgr}$	$1.5 \times 10^{-5} / ^\circ\text{C} \bullet \text{Rgr}$	$1 \times 10^{-5} / ^\circ\text{C} \bullet \text{Rgr}$
Sensitivity stability <sup>2)</sup>	$5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$	$5 \times 10^{-5} / \text{a} \bullet \text{Rgr}$
Interface update rate	23/s	23/s	23/s	23/s	23/s

#### Typical values for determination of the measurement uncertainty

Repeatability <sup>3)</sup> (sd)	$0.04 \text{ g} + 1.2 \times 10^{-6} \bullet \text{Rgr}$	$0.4 \text{ g} + 6 \times 10^{-6} \bullet \text{Rgr}$	$0.04 \text{ g} + 1 \times 10^{-6} \bullet \text{Rgr}$	$400 \text{ mg} + 8 \times 10^{-6} \bullet \text{Rgr}$	$0.4 \text{ g} + 5 \times 10^{-6} \bullet \text{Rgr}$
Differential linearity deviation (sd)	$\sqrt{2.5} \times 10^{-7} \text{ g} \bullet \text{Rnt}$	$\sqrt{2.5} \times 10^{-7} \text{ g} \bullet \text{Rnt}$	$\sqrt{2} \times 10^{-7} \text{ g} \bullet \text{Rnt}$	$\sqrt{2.5} \times 10^{-8} \text{ g} \bullet \text{Rnt}$	$\sqrt{2} \times 10^{-6} \text{ g} \bullet \text{Rnt}$
Differential eccentric load deviation (sd)	$1.2 \times 10^{-5} \bullet \text{Rnt}$	$3 \times 10^{-6} \bullet \text{Rnt}$	$6 \times 10^{-6} \bullet \text{Rnt}$	$3 \times 10^{-6} \bullet \text{Rnt}$	$3 \times 10^{-5} \bullet \text{Rnt}$
Sensitivity offset (sd)	$8 \times 10^{-6} \bullet \text{Rnt}$	$8 \times 10^{-6} \bullet \text{Rnt}$	$6 \times 10^{-6} \bullet \text{Rnt}$	$1.2 \times 10^{-5} \bullet \text{Rnt}$	$6 \times 10^{-6} \bullet \text{Rnt}$
Minimum weight (acc. to USP) <sup>3)</sup>	$120 \text{ g} + 3.6 \times 10^{-3} \bullet \text{Rgr}$	$1200 \text{ g} + 1.8 \times 10^{-2} \bullet \text{Rgr}$	$120 \text{ g} + 3 \times 10^{-3} \bullet \text{Rgr}$	$1200 \text{ g} + 2.4 \times 10^{-2} \bullet \text{Rgr}$	$1200 \text{ g} + 1.5 \times 10^{-2} \bullet \text{Rgr}$
Minimum weight (acc. to USP), fine range <sup>3)</sup>	—	$120 \text{ g} + 1.8 \times 10^{-2} \bullet \text{Rgr}$	—	—	—
Minimum weight (U = 1%, 2 sd) <sup>3)</sup>	$8 \text{ g} + 2.4 \times 10^{-4} \bullet \text{Rgr}$	$80 \text{ g} + 1.2 \times 10^{-3} \bullet \text{Rgr}$	$8 \text{ g} + 2 \times 10^{-4} \bullet \text{Rgr}$	$80 \text{ g} + 6 \times 10^{-3} \bullet \text{Rgr}$	$80 \text{ g} + 1 \times 10^{-3} \bullet \text{Rgr}$
Minimum weight (U = 1%, 2 sd), fine range <sup>3)</sup>	—	$8 \text{ g} + 1.2 \times 10^{-3} \bullet \text{Rgr}$	—	—	—
Settling time	1.2 s	1.2 s	1.2 s	1 s	1 s

Rgr = gross weight, Rnt = net weight, sd = standard deviation, a = year (annum)

<sup>1)</sup> In temperature range from 10...30 °C

<sup>2)</sup> Stability of sensitivity as from first installation with proFACT automatic adjustment switched on

<sup>3)</sup> Valid for compact objects; depends heavily on shape and size of weighing object and environmental conditions



Technical data	XP8001L	XP16001L	XP32001L	XP32001LDR
Stand alone weighing platform	—	X16001L	X32001L	—
<b>Limit values</b>				
Maximum capacity	8.1 kg	16.1 kg	32.1 kg	32.1 kg
Maximum capacity, fine range	—	—	—	6.4 kg
Readability	0.1 g	0.1 g	0.1 g	1 g
Readability, fine range	—	—	—	0.1 g
Repeatability (sd)	0.08 g	0.08 g	0.08 g	0.6 g
Repeatability, fine range (sd)	—	—	—	0.1 g
Linearity	0.2 g	0.2 g	0.3 g	0.3 g
Eccentric load deviation (measured at)	0.3 g (5 kg)	0.3 g (5 kg)	0.3 g (10 kg)	1 g (10 kg)
Sensitivity offset	$8 \times 10^{-5}$	$5 \times 10^{-5}$	$3 \times 10^{-5}$	$3 \times 10^{-5}$
Sensitivity temperature drift <sup>1)</sup>	$1.5 \times 10^{-5}/^{\circ}\text{C}$	$1.5 \times 10^{-5}/^{\circ}\text{C}$	$1 \times 10^{-5}/^{\circ}\text{C}$	$1 \times 10^{-5}/^{\circ}\text{C}$
Sensitivity stability <sup>2)</sup>	$5 \times 10^{-5}/\text{a}$	$5 \times 10^{-5}/\text{a}$	$3 \times 10^{-5}/\text{a}$	$3 \times 10^{-5}/\text{a}$
Interface update rate	23/s	23/s	23/s	23/s

**Typical values for determination of the measurement uncertainty**

Repeatability <sup>3)</sup> (sd)	$0.04 \text{ g} + 2.5 \times 10^{-6} \bullet \text{Rgr}$	$0.04 \text{ g} + 1.2 \times 10^{-6} \bullet \text{Rgr}$	$0.04 \text{ g} + 6 \times 10^{-7} \bullet \text{Rgr}$	$0.4 \text{ g} + 3 \times 10^{-6} \bullet \text{Rgr}$
Differential linearity deviation (sd)	$\sqrt{5 \times 10^{-7} \text{ g} \bullet \text{Rnt}}$	$\sqrt{2.5 \times 10^{-7} \text{ g} \bullet \text{Rnt}}$	$\sqrt{3 \times 10^{-7} \text{ g} \bullet \text{Rnt}}$	$\sqrt{3 \times 10^{-7} \text{ g} \bullet \text{Rnt}}$
Differential eccentric load deviation (sd)	$2 \times 10^{-5} \bullet \text{Rnt}$	$2 \times 10^{-5} \bullet \text{Rnt}$	$1 \times 10^{-5} \bullet \text{Rnt}$	$3 \times 10^{-5} \bullet \text{Rnt}$
Sensitivity offset (sd)	$1.2 \times 10^{-5} \bullet \text{Rnt}$	$8 \times 10^{-6} \bullet \text{Rnt}$	$5 \times 10^{-6} \bullet \text{Rnt}$	$5 \times 10^{-6} \bullet \text{Rnt}$
Minimum weight (acc. to USP) <sup>3)</sup>	$120 \text{ g} + 7.5 \times 10^{-3} \bullet \text{Rgr}$	$120 \text{ g} + 3.6 \times 10^{-3} \bullet \text{Rgr}$	$120 \text{ g} + 1.8 \times 10^{-3} \bullet \text{Rgr}$	$1200 \text{ g} + 9 \times 10^{-3} \bullet \text{Rgr}$
Minimum weight (acc. to USP), fine range <sup>3)</sup>	—	—	—	$120 \text{ g} + 9 \times 10^{-3} \bullet \text{Rgr}$
Minimum weight (U =1%, 2 sd) <sup>3)</sup>	$8 \text{ g} + 5 \times 10^{-4} \bullet \text{Rgr}$	$8 \text{ g} + 2.4 \times 10^{-4} \bullet \text{Rgr}$	$8 \text{ g} + 1.2 \times 10^{-4} \bullet \text{Rgr}$	$80 \text{ g} + 6 \times 10^{-4} \bullet \text{Rgr}$
Minimum weight (U =1%, 2 sd), fine range <sup>3)</sup>	—	—	—	$8 \text{ g} + 6 \times 10^{-4} \bullet \text{Rgr}$
Settling time	1.5 s	1.5 s	1.5 s	1.5 s



Technical data	XP64001L	XP16000L	XP32000L	XP64000L
Stand alone weighing platform	X64001L	—	X32000L	—
<b>Limit values</b>				
Maximum capacity	64.1 kg	16.1 kg	32.1 kg	64.1 kg
Maximum capacity, fine range	—	—	—	—
Readability	0.1 g	1 g	1 g	1 g
Readability, fine range	—	—	—	—
Repeatability (sd)	0.1 g	0.6 g	0.6 g	0.6 g
Repeatability, fine range (sd)	—	—	—	—
Linearity	0.5 g	0.6 g	0.6 g	0.6 g
Eccentric load deviation (measured at)	0.5 g (20 kg)	1 g (5 kg)	1 g (10 kg)	1 g (20 kg)
Sensitivity offset	$2 \times 10^{-5}$	$8 \times 10^{-5}$	$6 \times 10^{-5}$	$3 \times 10^{-5}$
Sensitivity temperature drift <sup>1)</sup>	$1 \times 10^{-5}/^{\circ}\text{C}$	$1.5 \times 10^{-5}/^{\circ}\text{C}$	$1.5 \times 10^{-5}/^{\circ}\text{C}$	$1.5 \times 10^{-5}/^{\circ}\text{C}$
Sensitivity stability <sup>2)</sup>	$5 \times 10^{-5}/\text{a}$	$5 \times 10^{-5}/\text{a}$	$5 \times 10^{-5}/\text{a}$	$3 \times 10^{-5}/\text{a}$
Interface update rate	23/s	23/s	23/s	23/s

**Typical values for determination of the measurement uncertainty**

Repeatability <sup>3)</sup> (sd)	$0.04 \text{ g} + 6 \times 10^{-7} \bullet \text{Rgr}$	$0.4 \text{ g} + 6 \times 10^{-6} \bullet \text{Rgr}$	$0.4 \text{ g} + 3 \times 10^{-6} \bullet \text{Rgr}$	$0.4 \text{ g} + 3 \times 10^{-6} \bullet \text{Rgr}$
Differential linearity deviation (sd)	$\sqrt{4 \times 10^{-7} \text{ g} \bullet \text{Rnt}}$	$\sqrt{2.5 \times 10^{-6} \text{ g} \bullet \text{Rnt}}$	$\sqrt{1.2 \times 10^{-6} \text{ g} \bullet \text{Rnt}}$	$\sqrt{6 \times 10^{-7} \text{ g} \bullet \text{Rnt}}$
Differential eccentric load deviation (sd)	$8 \times 10^{-6} \bullet \text{Rnt}$	$6 \times 10^{-5} \bullet \text{Rnt}$	$3 \times 10^{-5} \bullet \text{Rnt}$	$1.5 \times 10^{-5} \bullet \text{Rnt}$
Sensitivity offset (sd)	$3 \times 10^{-6} \bullet \text{Rnt}$	$1.2 \times 10^{-5} \bullet \text{Rnt}$	$1 \times 10^{-5} \bullet \text{Rnt}$	$5 \times 10^{-6} \bullet \text{Rnt}$
Minimum weight (acc. to USP) <sup>3)</sup>	$120 \text{ g} + 1.8 \times 10^{-3} \bullet \text{Rgr}$	$1200 \text{ g} + 1.8 \times 10^{-2} \bullet \text{Rgr}$	$1200 \text{ g} + 9 \times 10^{-3} \bullet \text{Rgr}$	$1200 \text{ g} + 9 \times 10^{-3} \bullet \text{Rgr}$
Minimum weight (acc. to USP), fine range <sup>3)</sup>	—	—	—	—
Minimum weight (U =1%, 2 sd) <sup>3)</sup>	$8 \text{ g} + 1.2 \times 10^{-4} \bullet \text{Rgr}$	$80 \text{ g} + 1.2 \times 10^{-3} \bullet \text{Rgr}$	$80 \text{ g} + 6 \times 10^{-4} \bullet \text{Rgr}$	$80 \text{ g} + 6 \times 10^{-4} \bullet \text{Rgr}$
Minimum weight (U =1%, 2 sd), fine range <sup>3)</sup>	—	—	—	—
Settling time	1.8 s	1.2 s	1.2 s	1.5 s

Rgr = gross weight, Rnt = net weight, sd = standard deviation, a = year (annum)

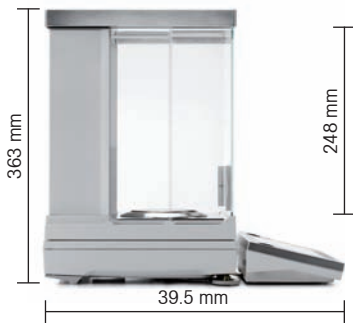
<sup>1)</sup> In temperature range from 10...30 °C

<sup>2)</sup> Stability of sensitivity as from first installation with proFACT automatic adjustment switched on

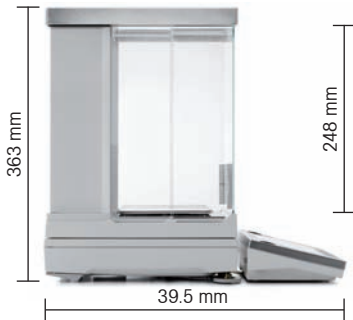
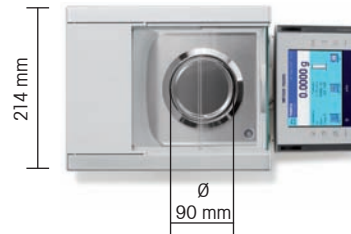
<sup>3)</sup> Valid for compact objects; depends heavily on shape and size of weighing object and environmental conditions



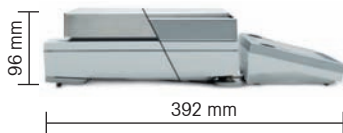
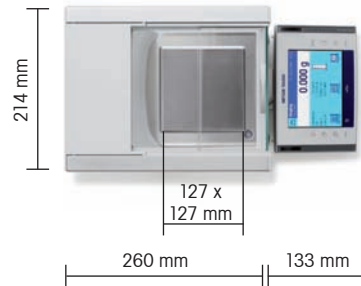
## S platform



Models with 0.1 mg readability  
Weight: 8.2 kg



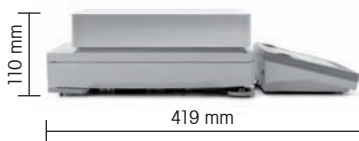
Models with 1 mg readability  
Weight: 8.6 kg



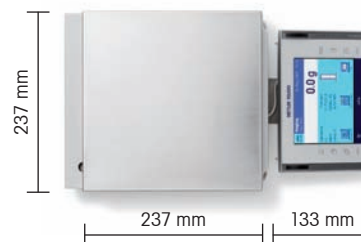
Models with 10 mg and 0.1 g readability  
Weight: 6.6 - 7.1 kg



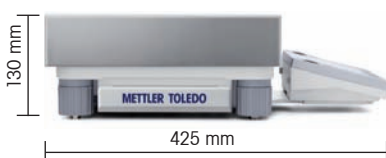
## M platform



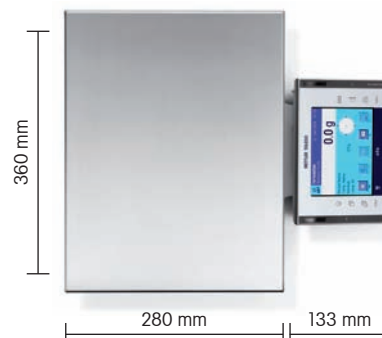
Models with 10 mg, 0.1 g and 1 g readability  
Weight: 8.0 kg



## L platform



Models with 0.1 g and 1 g readability  
Weight: 12.4 - 14.1 kg



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# Accessories

Article		Part No.	
Sensors	ErgoSens, optical sensor for hands-free operation	11132601	
Weighing pans	MPS (Magnetic Protection Shield) for 0.1 g models 190 x 223 mm	11132625	
	MPS (Magnetic Protection Shield) for 10 mg models 170 x 205 mm	11132626	
	Weighing pan 190 x 223 mm, incl. pan support	11132655	
	Weighing pan 170 x 205 mm, incl. pan support and draft ring	11132660	
Draft shields	Pro draft shield for 1 mg models, effective height 248 mm	11131651	
	Draft shield glass free for 0.1 mg and 1 mg models (food industry), effective height 248 mm	11131652	
	Draft shield for 0.1 g and 10 mg models, effective height 175 mm	11131653	
	MagicCube draft shield for 1 mg models, effective height 175 mm	11131650	
	Draft shield for whole balance ("S" and "M" platform), dimensions (W x D x H) 300 x 450 x 450 mm	11134430	
	Draft shield for whole balance ("L" platform), dimensions (W x D x H) 550 x 470 x 580 mm	11134470	
Printers	BT-P42 printer with wireless Bluetooth connection to balance	11132540	
	RS-P42 printer with RS232C connection to balance	00229265	
Optional interfaces	BT option: interface Bluetooth, wireless multipoint connection for up to 6 Bluetooth devices	11132530	
	BTS option: Interface Bluetooth, wireless single point connection	11132535	
	Ethernet option: Interface Ethernet for connection to Ethernet network	11132515	
	e-link IP65 EB01: Ethernet connection to the e-link network with IP65 protection	11120003	
	RS-USB converter cable	11103691	
	PS/2 option: Interface for connecting commercial keyboards and barcode readers	11132520	
	RS232C option: Interface for connection of a printer (RS-P42), computer or titrator	11132500	
	LocalCAN option: Interface for connection of up to five LC (LocalCAN) instruments	11132505	
	MiniMettler option: Second interface MiniMettler, for connection to older (legacy) systems	11132510	
Protective covers	Protective cover for XP terminal only	11132570	
	Protective cover for weighing platform "S", 10 mg / 0.1 g models (platform only)	11133034	
	Protective cover for weighing platform "M" (platform only)	11132574	
Stands and wall mounting	Terminal stand for placement of the terminal 30 cm above weighing pan ("S" and "M" platform)	11132636	
	Terminal stand for placement of the terminal 30 cm above weighing pan ("L" platform)	11132653	
	Terminal wall mounting	11132665	
	IP54 AC adapter protection	Protective cover for IP54 AC adapter	11132550
Anti-theft device	Steel cord	11600361	
Terminal cable	Terminal extension cable, 4.5 m	11600517	
Density kits	Density kit for precision balances, 1 mg and 0.1 mg models	11132680	
	Certified thermometer for density determination	11132685	
	Sinker 10 ml	00210260	
	Sinker 10 ml, certified model	00210672	
Dynamic weighing kit	Dynamic weighing kit for 0.1 mg and 10 mg models ("S" platform), 4 litre bowl	11132657	
Auxiliary displays	BT-BLD Bluetooth aux. display for benchtop mounting. Wireless connection. Backlit LCD display.	11132555	
	RS/LC-BLDS auxiliary display for benchtop mounting or on balance. Backlit LCD display.	11132630	
	LC/RS-BLD auxiliary display on benchtop stand with backlit LC display	00224200	
Barcode scanners	RS232C barcode scanner	21900879	
	AC adapter for barcode scanner 230 V EUR	21900882	
	AC adapter for barcode scanner 115 V USA	21900883	
	PS/2 barcode reader	21900880	
	PS/2Y barcode reader	21900881	
Filling-process control	LV11 small-item transporter for automatic loading of small items on the balance	21900608	
	LV11 Draft shield door "Pro" for 0.1 mg and 1 mg models	11132711	
LC-I/O Box	Relay interface for control of up to 8 external instruments from the balance	21202217	
Footswitches	Auxiliary footswitch with selectable function for the balance	11106741	
	LC footswitch with selectable function	00229060	
	Switchbox, connect up to 3 balances with LocalCan interface to a printer	00229220	
Transport case	Transport case for 10 mg / 0.1 g models ("S" platform), with space for printer	11132595	
Anti-static kits	Universal anti-static kit complete (U-shaped), including power supply	11107767	
	U-electrode for universal anti-static kit	11107764	
	Point-electrode for universal anti-static kit	11107765	
	Power supply for external anti-static kit (requires optional electrode)	11107766	
Hook below the balance	Hook for weighing below balance with "M" or "L" platform (integral to "S" platform)	11132565	
Software	LabX pro balance, powerful PC software for instrument control and data management	English	11120301
		German	11120302
		French	11120303
	LabX light balance, PC software for instrument control and data management	English	11120317
		German	11120318
		French	11120319
	LabX direct balance, PC software for easy data transfer in open applications (e. g. Excel)	English	11120340
	LabX balance validation manual 1	English	11120332
	LabX balance validation manual 2	English	11120333
	Freeweigh.Net		21900895
	SQC-XP software package		21901277

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